

WHAT IS CLAIMED IS:

1. A time-switched preamble generator for use with a multiple-input, multiple-output (MIMO) transmitter employing first and second transmit antennas, comprising:

an initial preamble formatter configured to provide a first preamble to said first transmit antenna and a second preamble to said second transmit antenna during an initial time interval; and

a subsequent preamble formatter coupled to said initial preamble formatter and configured to provide said second preamble to said first transmit antenna and said first preamble to said second transmit antenna during a subsequent time interval.

2. The generator as recited in Claim 1 wherein said first preamble employs a training sequence and said second preamble employs a null.

3. The generator as recited in Claim 2 wherein said training sequence occurs during said null.

4. The generator as recited in Claim 2 wherein said null is
2 selected from the group consisting of:

3 a null sequence;

4 a zero function; and

5 an un-modulated transmission.

5. The generator as recited in Claim 1 wherein said first
2 preamble employs a first training sequence and said second preamble
3 employs a second training sequence orthogonal to said first
4 training sequence.

6. The generator as recited in Claim 5 wherein said first
2 training sequence employs a subset of tones and said second
3 training sequence employs a remaining subset of tones.

7. The generator as recited in Claim 1 wherein at least one
2 of said first and second preambles employs a guard interval.

8. The generator as recited in Claim 1 wherein said initial
2 and subsequent time intervals are contiguous.

9. A method of generating a time-switched preamble for
use with a multiple-input, multiple-output (MIMO) transmitter
employing first and second transmit antennas, comprising:

providing a first preamble to said first transmit antenna and
a second preamble to said second transmit antenna during an initial
time interval; and

further providing said second preamble to said first transmit
antenna and said first preamble to said second transmit antenna
during a subsequent time interval.

10. The method as recited in Claim 9 wherein said first
preamble field employs a training sequence and said second preamble
field employs a null.

11. The method as recited in Claim 10 wherein said training
sequence occurs during said null.

12. The method as recited in Claim 10 wherein said null is
selected from the group consisting of:

a null sequence;

a zero function; and

an un-modulated transmission.

13. The method as recited in Claim 9 wherein said first
2 preamble employs a first training sequence and said second preamble
3 employs a second training sequence orthogonal to said first
4 training sequence.

14. The method as recited in Claim 13 wherein said first
2 training sequence employs a subset of tones and said second
3 training sequence employs a remaining subset of tones.

15. The method as recited in Claim 9 wherein at least one of
2 said first and second preambles employs a guard interval.

16. The method as recited in Claim 9 wherein said initial and
2 subsequent time intervals are contiguous.

17. A multiple-input, multiple-output (MIMO) communication
2 system, comprising:

3 first and second transmitters employing first and second
4 transmit antennas, respectively;

5 a time-switched preamble generator coupled to said first and
6 second transmitters, including:

7 an initial preamble formatter that provides a first
8 preamble to said first transmit antenna and a second preamble
9 to said second transmit antenna during an initial time
10 interval, and

11 a subsequent preamble formatter coupled to said initial
12 preamble formatter that provides said second preamble to said
13 first transmit antenna and said first preamble to said second
14 transmit antenna during a subsequent time interval; and

15 first and second receivers, associated with said first and
16 second transmitters, that employ first and second receive antennas,
17 respectively.

18. The system as recited in Claim 17 wherein said first
2 preamble employs a training sequence and said second preamble
3 employs a null.

19. The system as recited in Claim 18 wherein said training
2 sequence occurs during said null.

20. The system as recited in Claim 18 wherein said null is selected from the group consisting of:

a null sequence;

a zero function; and

an un-modulated transmission.

21. The system as recited in Claim 17 wherein said first
2 preamble employs a first training sequence and said second preamble
3 employs a second training sequence orthogonal to said first
4 training sequence.

22. The system as recited in Claim 21 wherein said first
2 training sequence employs a subset of tones and said second
3 training sequence employs a remaining subset of tones.

23. The system as recited in Claim 17 wherein at least one of
2 said first and second preambles employs a guard interval.

24. The system as recited in Claim 17 wherein said initial
2 and subsequent time intervals are contiguous.